

In the claims:

1. (currently amended) A method, executed by a router, for processing multicast data that is associated with a multicast group and transmitted to a port of a line card of the router, comprising the sequential steps of:

receiving multicast data for which state information is unknown because there is no specific identification in memory of at least one port associated with a destination of the multicast data;

determining ~~whether~~ that a data path within the router does not include ~~includes~~, in memory, forwarding information for the multicast data which specifically identifies at least one port associated with a destination of the multicast data;

~~if the data path does not include the forwarding information for the multicast data,~~
broadcasting the multicast data from each port of the router that could possibly be associated with a destination of the multicast data; and

subsequent to broadcasting the multicast data, determining via a control path which ports of the router are actually associated with a destination of the multicast data, and storing a specific indication of those ports in the memory of the data path,

whereby the multicast data is forwarded from the router even if the multicast data is dropped in the control path.

2. (previously presented) The method of claim 1 including the further step of transmitting subsequent multicast data associated with the multicast group via only the ports determined to be appropriate for the multicast group.

3. (previously presented) The method of claim 1 wherein the step of broadcasting the multicast data includes transmitting the multicast data via all ports except the port on which the multicast data was received.

4. (original) The method of claim 1 further comprising performing a reverse path forwarding check on the data.

5. (original) The method of claim 4 wherein the performing is done using a multicast border gateway protocol.

6. (original) The method of claim 1 further comprising verifying that the data was received at the proper line card.

7. (original) The method of claim 6 wherein the verifying is done using a multicast border gateway protocol.

8. (currently amended) An article comprising a machine-readable medium which stores machine-executable instructions the instructions causing a machine to process multicast data that is associated with a multicast group and transmitted to a port of a line card of a router to:

receive multicast data for which state information is unknown because there is no specific identification in memory of at least one port associated with a destination of the multicast data;

determine ~~that whether~~ a data path within the router does not include ~~includes~~, in memory, forwarding information for the multicast data which specifically identifies at least one port associated with a destination of the multicast data;

~~if the data path does not include the forwarding information for the multicast data,~~ prompt broadcast of the multicast data from each port of the router that could possibly be associated with a destination of the multicast data; and

subsequent to prompting broadcast of the multicast data, determine via a control path which ports of the router are actually associated with a destination of the multicast data, and store a specific indication of those ports in the memory of the data path.

9. (previously presented) The article of claim 8 wherein the instructions cause the machine to transmit subsequent multicast data associated with the multicast group from only the ports determined to be appropriate for the multicast group.

10. (previously presented) The article of claim 8 wherein the instructions cause the machine to broadcast the multicast data from all ports except the port on which the multicast data was received.

11. (original) The article of claim 8 further causing a machine to perform a reverse path forwarding check on the data.

12. (original) The article of claim 11 wherein the performing is done using a multicast border gateway protocol.

13. (original) The article of claim 8 further causing a machine to verify that the data was received at the proper line card.

14. (original) The article of claim 13 wherein the verifying is done using a multicast border gateway protocol.

15. (currently amended) A router operative to process multicast data that is associated with a multicast group and transmitted to a port of a line card of the router comprising:

processing logic operable to receive multicast data for which state information is unknown because there is no specific identification in memory of at least one port associated with a destination of the multicast data;

processing logic operable to determine that whether a data path within the router does not include ~~includes~~, in memory, forwarding information for the multicast data which specifically identifies at least one port associated with a destination of the multicast data;

processing logic operable ~~if the data path does not include the forwarding information for the multicast data~~ to prompt broadcast of the multicast data from each port of the router that could possibly be associated with a destination of the multicast data; and

processing logic operable to determine via a control path, and subsequent to broadcast of the multicast data, which ports of the router are actually associated with a destination of the multicast data, and store a specific indication of those ports in the memory of the data path.

16. (original) The router of claim 15 further comprising a fabric configured to attach to the line card and to the central controller and configured to direct data.

17. (original) The router of claim 15 further comprising a plurality of line cards, each additional line card configured similar to the line card.

18. (previously presented) The router of claim 15 further including processing logic operative to transmit subsequent multicast data associated with the multicast group from only the ports determined to be appropriate for the multicast group.

19. (previously presented) The router of claim 15 further including processing logic operative to broadcast the multicast data from all ports except the port on which the multicast data was received.

20. (previously presented) A method for processing multicast data which is associated with a multicast group and transmitted to a port of a line card of a router comprising:

- receiving multicast data for which state information is unknown because there is no specific identification in memory of at least one port associated with a destination of the multicast data;

- broadcasting the multicast data from each port of the router that could possibly be associated with a destination of the multicast data;

- subsequent to broadcast of the multicast data, performing a reverse path forwarding check on the multicast data;

- verifying that the multicast data was received at a proper interfaces;

- determining a multicast group associated with the multicast data; and

- routing subsequent multicast data associated with the multicast group from only the ports associated with the multicast group.

21. (original) The method of claim 20 wherein the multicast data is stored at a data path of a line card.

22. (original) The method of claim 20 further comprising multicasting the multicast data to all available interfaces after storing the multicast data.

23. (original) The method of claim 20 wherein the state information includes a source parameter indicating a source of the multicast data.

24. (original) The method of claim 20 wherein the state information includes a group parameter indicating at least one destination of the multicast data.

25. (original) The method of claim 20 wherein the multicast data is received at a line card.

26. (original) The method of claim 20 wherein a data path associated with a router and configured to process multicast data executes the performing and the verifying.

27. (original) The method of claim 26 wherein the data path uses a multicast border gateway protocol in executing the performing and the verifying.

28. (original) The method of claim 20 wherein a processor included in a router and configured to process multicast data executes the determining.

29. (original) The method of claim 20 further comprising trimming routes to paths not associated with the multicast group.

30. (original) The method of claim 20 further comprising receiving multicast data including known state information.

31. (original) The method of claim 30 further comprising verifying that the multicast data including known state information was received at a proper interface.

32. (original) The method of claim 31 further comprising multicasting the multicast data including known state information according to the known state information if the multicast data including known state information is verified.

33. (original) The method of claim 31 further comprising dropping the multicast data including known state information if the multicast data including known state information is not verified.

34. (previously presented) A method executed by a router for processing multicast data which is associated with a multicast group and transmitted to a port of a line card of a router, comprising the steps of:

- determining whether a data path within the router includes forwarding information for the multicast data, in memory, which specifically identifies at least one port associated with a destination of the multicast data;

- if the data path does not include the forwarding information for the multicast data, installing a default state associated with multicast data in a data path of a line card;

- broadcasting the multicast data from the line card to all other line cards that the line card is configured to communicate with;

- sending the multicast data from the data path to a control path of the line card;

- subsequent to broadcasting the multicast data, at the control path, computing a route for the multicast data;

- sending the computed route from the control path to the data path; and

- designating that the line cards not included in the computed route not broadcast multicast data having the same state information and subsequently received at the data path.

35. (original) The method of claim 34 further comprising performing at the data path a reverse path forwarding check on the multicast data using a multicast gateway border protocol.

36. (original) The method of claim 34 further comprising prior to the installing, checking state information associated with the multicast data with a multicast border gateway protocol to verify that the line card received the multicast data from a proper source.